List of Contents

NUMBER 1

i Softstrip data strips containing the table of contents

Computational Geometry

Joseph Hoschek 1 Guest editor's introduction

Peter Paukowitsch 3 Fundamental ideas for computer-supported descriptive geometry

Hermann Schaal 15 Computer graphical treatments of perspective pictures

Johann Lang 33 On illuminations of C^2-surfaces in vector graphic description

Gunter Weiss and **Peter Furtner** 39 Computer-aided treatment of developable surfaces

Wilhelm Fuhs and **Hellmuth Stachel** 53 Circular pipe-connections

Technical Section

J. Flaquer and **J. L. Rodil** 59 Boolean operations based on the planar polyhedral representation

Marshall Walker, Reng Song Lo and **S. F. Cheng** 65 Hidden line detection in polytree representations

Venkatramana G. Ajjanagadde and **L. M. Patnaik** 71 Design and performance evaluation of a systolic architecture for hidden-surface removal

J. R. Parker 75 Extracting vectors from raster images

Clifford A. Pickover 81 Rendering of the Shroud of Turin using sinusoidal pseudocolor and other image processing techniques

Short Technical Notes/Technical Forum/Systems

Michael J. Zyda and **Robert A. Walker** 91 Design notes on a single board multiprocessor for real-time contour surface display generation

Sarbast M. Rasheed, Bakir H. Al-Hashemy and **Ahmad I. Sheikh Ahmad** 99 Synthesis and analysis of flow about airfoils with interactive graphics

Glossary/Surveys

I. V. Nagendra and **U. G. Gujar** 111 3-D objects from 2-D orthographic views—a survey

Phillip Chen-Yu Sheu 115 Object-oriented graphics knowledge bases

News and Views

Georges Grinstein 125 University of Lowell computer graphics

Graphics Art

Harold J. McWhinnie 129 Technology update: computer graphics software

Samuel D. Huang and **Denise M. Hammonds** 133 "To be of one's own time": high-tech meets tradition in computer graphic art

Announcements

141 Reduced subscription for members of Eurographics to *Computers & Graphics*

143 Symposium on advances and trends in computational structural mechanics and fluid dynamics

I Software survey section
DG87

NUMBER 2

i Softstrip data strips containing the table of contents

J. L. Encarnação v Introduction by the Editor-in-Chief

3D Standards

J. Rix 145 Guest editor's introduction

I. Herman, T. Tolnay-Knefely, J. Reviczky and **F. L. Westhoff** 149 Three-dimensional graphic standards and CGI

S. S. Abi-Ezzi, J. F. Molina and **M. A. Toelle** 155 A special graphics system for PHIGS

S. Noll and **J. Poller** 163 PHI-GKS: An implementation to support GKS-3D and PHIGS

K. Klement and **H. Nowacki** 173 Exchange of model presentation information between CAD systems

I. Bey and **U. Gengenbach** 181 The CAD*I interface for solid model exchange

Eurographics '87 Award Papers

I. Herman and **J. Reviczky** 191 A means to improve the GKS-3D/PHIGS output pipeline implementation

T. Howard 201 A shareable centralised database for KRT^3: A hierarchical graphics system based on PHIGS

A. Kaufman 213 Efficient algorithms for scan-converting 3D polygons

Technical Section

L. Piegl 221 Coons-type patches

S. A. Jassim	229	A noniterative algorithm for generating connected quadrilaterals of specified area
R. C. Joshi, H. Darbari, S. Goel and **S. Sasikumaran**	235	A hierarchical Hex-tree representational technique for solid modelling
J. R. Rankin	239	Classes of polyhedra defined by jet graphics
		Short Technical Notes/Technical Forums/Systems
S. A. Segenreich	255	How to build a lattice nesting in any arbitrary direction
		Graphics Art
C. A. Pickover	263	A note on rendering 3-D strange-attractors
H. J. McWhinnie	269	The electronic museum
		Computer Graphics & Education
A. W. Jackson and **J. M. Morris**	271	Enhancement of DIGLIB: Computer graphics software for animated computer-generated video movies
		News and Views
F. R. A Hopgood, K. Robinson, J. R. Gallop and **D. A. Duce**	285	Computer graphics at Rutherford Appleton Laboratory
		Announcements
	289	Reduced subscription for members of Eurographics to *Computers & Graphics*
	291	CAD/CAM technology transfer to Latin America
	292	Eurographics—The European Association for Computer Graphics
	293	Eurographics '88: Call for contributions
	295	Computer Graphics in Canada: A call for papers
	I	Software survey section

NUMBERS 3/4

	i	Softstrip data strips containing the table of contents
		Computer Graphics in China
Zesheng Tang	297	Guest editor's introduction
Yining Zhu, Qunsheng Peng and **Youdong Liang**	299	PERIS: A programming environment for realistic image synthesis
Xinyou Li, Zesheng Tang and **Jiaguang Sun**	309	The implementation of set operation for regularized geometric object

Dechang Ma and **Rongxi Tang**	319	Realizing the Boolean operations in solid modeling technique via directed loops
Lin Feng	323	Rule-based art pattern CAD
Yihua Xiong, Hongwen Zhang and **Shenquan Liu**	329	An implementation of the graphical kernel system (GKS)
Minghua Jia, Xianzhang Zeng and **Xueyu Ruan**	335	Computer-aided design of extrusion dies
Jing-Ling Xue and **Xian-Long Hong**	341	A new data structure for representing cell hierarchy in layout design
Zhenghao Yeh and **Daoning Ying**	349	An automated interface between CAD and CAM
		Computer Graphics in Mexico
Gerardo Leon Lastra	359	Guest editor's introduction
A. Afuso Higa and **M. Vega Ortíz**	361	Computer graphics in distribution system planning
R. J. Caudillo and **R. Sanchez**	365	Interactive graphic editor for circuit design
Yoshito Mitani N., H. R. Raya Merchand and **E. Ortiz Velazquez**	371	Development of computer-aided design systems for metal-forming processes
J. Carlos Siska, Ricardo H. Espinosa, David A. Treviño, Junipero Rodriguez, Juan D. Sanchez and **Hector Ramirez**	381	3D solid modeling software development for industrial and academic purposes
Alberto A. Hernández-Luna and **Luis Cárdenas-Franco**	391	Optimal design of glass molds using CAD/CAE and response surface methodology techniques
Ricardo Berlanga Zubiaga	401	On the intersection of two planar polygons
		Computer Graphics in the USSR
V. E. Klimov	405	Guest editor's introduction
V. E. Klimov, V. V. Klishin, A. V. Neder and **A. S. Terentiev**	407	A system of solid modeling for low-cost CAD systems
E. P. Velikhov, V. B. Betelin, Ju. S. Vishnjakov and **A. I. Stavitskij**	415	Computer-aided strength calculation system

A. Liashtchenko and **V. Zaitsev**	425	Interactive graphic systems design on the GKS-standard and unified language processor basis
M. A. Berezovsky and **A. K. Yablonsky**	433	Synthesis of halftone 3D images on an array processor
A. M. Matsokin, V. A. Debelov, V. G. Sirotin and **S. A. Upol'nikov**	441	Multi-purpose computer graphics system SMOG-85
A. A. Pasko, V. V. Pilyugin and **V. N. Pokrovskiy**	457	Geometric modeling in the analysis of trivariate functions
V. R. Khachaturov, N. D. Astakhov, V. E. Veselovskij, A. V. Zlotov, I. A. Krylov and **I. H. Sigal**	467	Computer-aided oilfield assimilation design system: Purpose and major capabilities
		Technical Section
Wojciech Mokrzycki	477	Algorithms of discretization of algebraic spatial curves on homogeneous cubical grids
Giulio Casciola	489	Basic concepts to accelerate line algorithms
Flavio Bonfatti and **Lorenza Cavazza**	503	SECT: An effective coding technique for polygonal geographic data
Kevin G. Suffern	515	Perspective views of polar coordinate functions
A. C. Liu and **K. S. Wong**	525	Automatic generation of process flow diagrams
Uday G. Gujar, Virendra C. Bhavsar and **Narendra N. Datar**	541	Interpolation techniques for 3-D object generation
Allen Klinger and **Warren K. Fox**	557	Point data analysis
Luis G. Occeña and **Jose M. A. Tanchoco**	565	GSS—A CAD-based graphic sawing simulator for hardwood logs
	579	*Short Technical Notes/Technical Forum/Systems*
		News and Views
H. Grabowski and **R. Anderl**	583	Institute for computer science and application in planning and design
Ilio Galligani	587	A laboratory for experimental data processing
J. L. Encarnação	589	Book review
		Computer Graphics & Education
Ahmet Coşar and **Bülent Özgüç**	591	A simple animation package

Announcements

595 Call for papers: Pictorial information systems

596 Call for papers: Implementation and design with graphics arts workstations

596 CAD/CAM technology transfer to Latin America

F. R. A. Hopgood 597 Eurographics '89, Hamburg, 4–8 September '89

598 Call for participation: Third international conference on human-computer interaction

599 Erratum

I Volume 12 list of contents and author index

XI Software survey section
TAG Software Development System